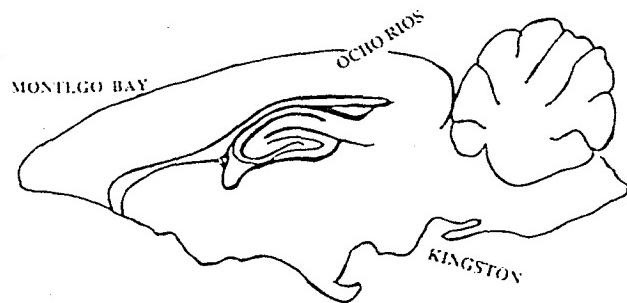


Neurodegenerative Disorders: Common Molecular Mechanisms



The Decade of the Brain Midpoint

Ocho Rios , Jamaica , April 2-7, 1995

Program and Abstracts

**NEURODEGENERATIVE DISORDERS;
COMMON MOLECULAR MECHANISMS**
The Decade of the Brain: Midpoint

Ocho Rios, Jamaica
April 2-7, 1995

Organized by:



**Department of Anatomy and Cell Biology
University of Göteborg
Neuroscience Research Center (NRCG)
Göteborg, Sweden**

and



**Department of Medicine
University of the West Indies
Kingston, Jamaica, West Indies**

Acknowledgements

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Air Jamaica	
Astra Arcus	Sweden
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The Council for Tobacco Research	USA
UpJohn	USA
Wyeth-Ayerst Research	USA

We would like to acknowledge two persons from the University of Göteborg Department of Anatomy and Cell Biology : Anne Christine Illerskog and George McFarlane for their constant and willing assistance.
We also extent a warm thanks to the entire Department Anatomy and Cell Biology for their support.

Program Committee

A. McRae	Sweden
D. Armstrong	USA
P. Belichenko	Sweden
J. Bruno	USA
A. Dahlström	Sweden
R. Friedland	USA
O. Morgan	Jamaica
P. Rodgers-Johnson	Jamaica
M. Sarter	USA
V. Singh	USA
M. Smith	USA
C. Vidal	France
G. Walkinshaw	UK
C. Waters	UK

ANNOUNCEMENTS:

Angela Ford, from the University of Pittsburgh 's Alzheimer's Disease Research Center will attend the meeting. She has a video about caregiving and coping with the impact of Alzheimer 's disease. Persons interested in viewing the video should contact Ms. Ford for an appointment.

Dr. Nibaldo Hernandez- Mesa , President of the Caribbean Brain Research Organization (CARIBRO) along with Drs. Manuel Anton and Alberto Dorta will be at the meeting. Persons interested in membership and general information about CARIBRO are requested to contact them at the CARIBRO information desk.

GENERAL INFORMATION

CONFERENCE VENUE

The Jamaica Grande

Mailing address PO Box 100 Ocho Rios, Jamaica West Indies
Telephone 1-809 974 2201 Fax 1-809 974 5378

REGISTRATION OUTSIDE WINDSOR BALLROOM

Registration will be opened Sunday April 2 from 14:00-19:00 and during the conference from 09:00-17:00

PRESENTATIONS

Only oral presentations of 30 minutes. (20 min presentation +10 min discussion). The discussion is being left to the discretion of the session chair who will select the best way to hold the discussion either after each presentation, or a general discussion at the end of the session. This will be announced at the beginning of the session.

TOURS

Ocho Rios is located near sites of interest such as Dunn River Falls, Fern Gilly Shaw Park Botanical Gardens and the Craft Market located about 10 minutes from the hotel. Visits to these places and others can be arranged through Daisey Allasio Wilson from International Properties and Tours who will be at the conference to assist you.

MEALS

All meals are included with the hotel.

Breakfast buffet 7 am-10:30 am (Continental breakfast is served in the room)

Lunch Noon-15:00

Dinner 18:00-22:00

WELCOME RECEPTION

Sunday April 2, 17:00-19:00

OPENING CEREMONY

Monday April 3, 09:00-10:00

CLOSING BANQUET

Friday April 7, 19:30.

BANKS

A number of banks are conveniently located in the down town area of Ocho Rios.

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GENERAL PROGRAM

**NEURODEGENERATIVE DISORDERS
COMMON MOLECULAR MECHANISMS**
Ocho Rios, Jamaica April 2-7, 1995

GENERAL PROGRAM

SUNDAY APRIL 2

14:00-19:00 **Registration**
17:00-19:00 **Reception**

MONDAY April 3

- | | | |
|-------------|--------------------|--|
| 09:00 | Welcome Addresses: | Organizing Committee |
| 10:30 | Plenary Lecture | DC Gajdusek USA |
| 15:00-17:00 | Session I | New Research Strategies for Studying the
Neuronal Mechanisms of Cognitive Disorders
Chair J Bruno ; M Sarter USA |
| 17:30-19:00 | Session II | Nicotinergic Receptors in Neurodegenerative
Disorders
Chair C Vidal France |

TUESDAY April 4

- | | | |
|-------------|-------------|--|
| 08:30-11:45 | Session III | Free Radical Mechanisms in Neurodegenerative Disorders- A Common Pathogenesis?
Chair M Smith USA |
| 14:30-16:10 | Session IV | Glutamatergic Mechanisms in Alzheimer's disease
Chair D Armstrong USA |
| 16:30-19:00 | Session V | Immune Mechanisms in Neurodegenerative and Neuropsychiatric Disorders:
Chair V Singh USA |

WEDNESDAY April 5

- | | | |
|-------------|--------------|---|
| 08:00-10:40 | Session VI | Human Brain Mapping Project. Where Are We?
Chair A. Dahlström Sweden |
| 11:00-12:00 | Session VII | Caregiving and Coping with Alzheimer's disease
Chair R Friedland USA |
| 16:30-19:00 | Session VIII | Neurodegenerative Mechanisms: Clinical and Experimental
Chair C Charlton USA ; B Bharaj Jamaica |

THURSDAY April 6

- 08:00-10:15 Session IX Apoptosis and Neurodegenerative Disorders
Chair C Waters ; G Walkinshaw UK
- 10:30-13:00 Session X Therapeutic Strategies
Chair P Schubert Germany
- 15:00-18:45 Session XI Trophic Factors Importance for Neurodegenerative
Disorders
Chair E Hirsch France ; M Gupta USA

FRIDAY April 7

- 08:00-11:45 Session XII Neuropathology Clinical and Experimental Aspects
Chair P Liberski Poland ; R Petersen USA
- 11:45-12:15 Session XIII The Caribbean and The Decade of the Brain
Chair A McRae Sweden
- 14:00-17:00 Session XIV Clinical and Experimental Investigations in the
Caribbean
Chair H Stokes Guatemala ; F Hickling Jamaica

Closing Remarks

Banquet 19:30

PROGRAM

Monday April 3

09:00 Welcome Addresses: Organizing Committee

■ Break 10:00

10:30 Plenary Lecture Chair: Prof P Rodgers-Johnson Jamaica

**INFECTIOUS AMYLOID PROTEINS IN NEURODEGENERATIVE
DISEASES
DC GAJDUSEK USA**

Monday April 3

15:00-17:00

I New Research Strategies for Studying the Neuronal Mechanisms of Cognitive Disorders Chairs: J Bruno & M Sarter USA

**15:00 Trans-synaptic modulation of cortical acetylcholine release: a new approach to restore cholinergic function
J Bruno USA**

**15:30 Gating of prefrontal cortical input to the nucleus accumbens by the hippocampus: implications for the etiology of schizophrenia
A Grace USA**

**16:00 Alterations in mesolimbic D3 and intrahippocampal D2 receptors in elderly schizophrenia and Alzheimer's disease.
J Joyce USA**

**16:30 Discussion Neuronal mechanisms of cognitive disorders: cognition is a crucial experimental variable.
M Sarter USA**

■ Break 17:00-17:30

17:30-19:00

**II Nicotinergic Receptors in Neurodegenerative Disorders
Chair: C Vidal France**

**17:30 Nicotinic receptors in the brain molecular biology, function and therapeutics
C Vidal France**

**18:00 Deficits in nicotinic receptors in Alzheimer's and Parkinson's diseases : Possible significance and impact of apolipoprotein E genotypes.
R Quirion Canada**

**18:30 Nicotinic drug treatment in Alzheimer's disease from the laboratory to the clinic.
P Whitehouse USA**

Tuesday April 4

08:00-11:45

**III Free Radical Mechanisms in Neurodegenerative Disorders-A
Common Pathogenesis? Chair: M Smith USA**

**08:00 CNS sources of reactive oxygen species
C Colton USA**

**08:30 The oxidative stress-heat shock connection relevance to Alzheimer's
disease
M Pappolla USA**

**09:00 Neurodegeneration a biochemical perspective
B Bharaj Jamaica**

■ Break 09:30-09:45

**09:45 Oxidative stress and alterations of signal transduction deficits in aging and
aged related diseases
J Joseph USA**

**10:15 Oxidative posttranslational modifications in Alzheimer disease
M Smith USA**

**10:45 Advanced glycation endproducts (AGEs) modify β amyloid in
Alzheimer's disease and affect β amyloid mediated toxicity
M Vitek USA**

**11:15 Neuronal death:common mechanisms in development and disease
S Catsicas Switzerland**

Tuesday April 4

14:30-16:10

IV Glutamatergic Mechanisms in Alzheimer's disease
Chair: D Armstrong USA

- 14:30 Overview of glutamatergic mechanisms in Alzheimer's disease**
D Armstrong USA

- 14:40 Mitochondrial dysfunction and excitotoxicity in the hippocampus of Alzheimer's disease**
J Greene USA

- 15:10 Cytoskeletal disruption resulting from excitotoxic insult and impaired energy metabolism: implications for Alzheimer's disease**
J Geddes USA

- 15:40 Alterations in AMPA receptor subunit immunoreactivity within hippocampal formation of brains affected by Alzheimer's disease pathology**
M Ikonomovic USA

■ Break 16:10-16:30

16:30-19:00

V Immune Mechanisms in Neurodegenerative and Neuropsychiatric Disorders: Chair: V Singh USA

- 16:30 Immune mechanisms in autism and related disorders**
R Warren USA

- 17:00 Inflammation and Alzheimer's disease**
P Aisen USA

- 17:30 Microglial antibodies significance for Alzheimer's disease**
A McRae Sweden

- 18:00 Binding of Amyloid- β to C1q and cellular susceptibility to complement activation**
D Michaelson Israel

- 18:30 Immune activation model: Alzheimer's disease and related disorders**
V Singh USA

Wednesday April 5

08:00-10:40

VI Human Brain Mapping Project. Where are we ?"
Chair: A Dahlström Sweden

08:00 Introduction - The 1990s has been called "The Decade of the Brain"
A Dahlström Sweden

08:10 Human brain mapping project - The first five years
S Koslow USA

08:40 Magnetoencephalography a noninvasive technique for functional brain
mapping
J Knuutila Finland

09:10 From pixels, via voxels toward dynamic objects: current trends in analysis
and visualisation for the neurosciences
N Clinch UK

09:40 Human brain mapping at the single cell and fiber level
P Belichenko Sweden

10:10 Noninvasive imaging of anti-A beta murine monoclonal antibody Fab
labelled with technetium 99m in Alzheimer's disease.
R Friedland USA

■ 10:40-11:00 Break

11:00-12:00

VII Caregiving and Coping With Alzheimer's Disease
Chair: R Friedland USA

11:00 Levels of mental impairment in the Jamaican elderly
D Eldemire Jamaica

11:30 Alzheimer's Disease:outreach to the African American community
A Ford USA

Wednesday April 5

16:30-19:15

VIII Neurodegeneration Mechanisms: Clinical and Experimental
Chairs: C Charlton USA & B Bharaj Jamaica

16:30 Common pathophysiological mechanisms of chronic neurological diseases
dementia, Parkinson, epilepsy, stroke and schizophrenia
H Stokes Guatemala

17:00 Regulation of glutamate uptake in experimental epilepsy
J Ortiz Puerto Rico

17:30 Possible role of methylated phospholipids in parkinsonism caused by
excess s-adenosyl-l-methionine-induced methylation
C Charlton USA

■ Break 18:00-18:15

18:15 Herpes Simplex virus type I in brain : an environmental risk factor in
Alzheimer's disease
R Itzhaki UK

18:45 Differential interaction between virus and host cell in developing versus
mature mouse brain determines spread, restricted replication, cell death,
persistence and age related virulence of semliki forest virus
K Oliver UK

Thursday April 6

08:00-10:15

IX Apoptosis and Neurodegenerative Disorders
Chairs: C Waters & G Walkinshaw UK

08:00 Apoptosis of neurones, in development and disease - an overview
C Waters UK

08:15 Apoptotic components appear following transient cerebral ischemia in rats.
J MacManus Canada

08:45 Induction of apoptosis in catecholaminergic PC12 cells by L-DOPA
implications for the treatment of Parkinson's disease
G Walkinshaw UK

09:15 The relationship of apoptosis and impaired receptor gene expression to the
loss of striatal D-2 dopamine receptor containing neurons during aging
G Roth USA

09:45 Apoptosis is induced by expression of mutant amyloid precursor protein
in neuronal cells
J Kusiak USA

10:15 Apoptosis mediated neurotoxicity induced by chronic application of
β-amyloid and PrP fragments
G Forloni Italy

■ Break 10:45-11:00

Thursday April 6

11:00-13:30

X Therapeutic Strategies

Chair: P Schubert Germany

**11:00 Neurotoxic lesion of basalo-cortical or septo hippocampal pathways
recovery induced by chronic infusion of exogenous nerve growth factor
C Fernandez Cuba**

**11:30 Antigen specific treatment of autoimmune diseases: induction of clonal
anergy and programmed cell death in cloned T cells
B Nag USA**

**12:00 Assessing the potential of adenoviral vectors for gene transfer to brain
D Ingram USA**

**12:30 Modulation of glial cell functions by adenosine and pharmacological
reinforcement
P Schubert Germany**

**13:00 What is behind ischemic neuronal damage? How does mild hypothermia
modulate it?
K Kataoka Japan**

Thursday April 6

15:00-18:45

XI Trophic Factors Importance for Neurodegenerative Disorders
Chairs: E Hirsch France & M Gupta USA

15:00 Targeting by regenerating axons
D Kuffler Puerto Rico

15:30 Laminin alpha 2 like antigens in CNS dendritic spines
M Jucker USA

16:00 Neurotrophin receptors and selective loss of cholinergic neurons in
Alzheimer's disease
E Hirsch France

■ Break 16:30-16:45

16:45 Effects of BDNF on dopaminergic neurons in dissociated and free-floating
roller tube cultures of human fetal ventral mesencephalon
L Studer Switzerland

17:15 Regulation of the dopamine neuron phenotype in mesencephalic
progenitor cells
P Carvey USA

17:45 Response of trophic factors in the prevention of MPTP toxicity in the
young and aging mice
M Gupta USA

18:15 NGF in experimental models of Parkinson's disease
L Lorigados Cuba

Friday April 7

08:00-11:45

XII Neuropathology: Clinical and Experimental Aspects
Chairs: P Liberski Poland & R Petersen USA

08:00 Neural Networks in the study of degradation of the brain
H Reichgelt Jamaica

08:30 Differential loss of dopamine transporter and tyrosine hydroxylase mRNAs in midbrain of Parkinson's, Alzheimer with parkinsonism and Alzheimer's disease
J Joyce USA

09:00 Presence of amyloid and DNA in senile plaques neurofibrillary tangles and neuropil threads: Alzheimer's disease a neurospirochetosis?
J Miklossy Switzerland

■ Break 09:30-09:45

09:45 Human T-cell lymphotrophic virus the clinical spectrum of infection
P Rodgers-Johnson Jamaica

10:15 How do neurons degenerate in transmissible spongiform encephalopathies?
P Liberski Poland

10:45 Observation of possible intermediates in the conversion of PrP^c to PrP^{Sc}
J Hope UK

11:15 Affect of mutations in the prion protein on processing in transfected human cell lines
R Petersen USA

11:45-12:15

XIII The Caribbean and the Decade of the Brain
Chair: A McRae Sweden

11:45 Caribbean Brain Research Organization: introduction and future directions
N Hernandez Mesa Cuba

Friday April 7

14:00-17:15

XIV Clinical and Experimental Investigations in the Caribbean
Chairs : H Stokes Guatemala & F Hickling Jamaica

14:00 Psychopathology of white immigrants to Jamaica
F Hickling Jamaica

14:30 Computer program to guide the search for relevant mitochondrial mutations
D Clarke Cuba

15:00 Neuroimmunological findings in Guillain Barre's Syndrome, Multiple Sclerosis and idiopathic polineuropathies
A Dorta Cuba

■ Break 15.30-1545

15:45 Cerebrovascular Disease in Guatemala hemorrhagic stroke is equal or more common than ischemic stroke
H Stokes Guatemala

16:15 A preliminary investigation of the role of cytochrome C oxidase in swayback disease in sheep
A Adogwa Trinidad

16:45 Neural factors influence the degeneration of muscle fibers in the chelae of snapping shrimps
R Young Jamaica

Closing Remarks 17:15

Banquet 19:30